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NOTES ON "TYPES" OF THE AUSTRALIAN SPECIES OF THE *ROPALIDIA INTERRUPTA* COMPLEX (HYMENOPTERA: VESPIDAE: POLISTINAE)

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Abstract

Notes are provided on "types" of the following Australian taxa of the *Ropalidia interrupta* complex: *R. variegata interrupta* van der Vecht, *R. variegata flavinoda* van der Vecht, *R. mutabilis mutabilis* Richards and *R. mutabilis torresiana* Richards.

Introduction

In his monograph on the Australian social wasps, Richards (1978) treated *Ropalidia variegata interrupta* van der Vecht, 1941 as a valid full species and *R. variegata flavinoda* van der Vecht, 1941 as a subspecies of *interrupta*, and described *R. mutabilis* and its subspecies *torresiana* as a species closely related to *R. interrupta*. His conclusions, however, were not based on the examination of any types of *R. interrupta* or *R. flavinoda*. Richards (1978: 89) stated that the holotypes of *interrupta* and *flavinoda* 'should be at Harvard but could not be found, and may have been lost when Van der Vecht returned them by post in 1941'. Elsewhere (Kojima 1999), I revised the taxonomy of the Australian *Ropalidia* Guérin-Méneville and concluded that the holotypes of *R. variegata interrupta* and *R. variegata flavinoda* were in the Museum of Comparative Zoology, Harvard University, Cambridge (MCZ). I then treated both *R. interrupta* and *R. flavinoda* as full species and synonymized *R. mutabilis mutabilis* and *R. m. torresiana* respectively under *R. interrupta* and *R. flavinoda* after examining the holotypes of both of Richards' taxa housed in the Australian National Insect Collection, CSIRO, Canberra (ANIC).

A recent visit to the Nationaal Natuurhistorisch Museum, Leiden (NNM) revealed a number of specimens of the *R. interrupta* complex that are incorrectly or ambiguously labelled as types. These include a female labelled as a 'topotype' of *R. interrupta* and a "pseudotype" specimen which appears to match Richards' (1978) original description of *R. m. torresiana*. In order to avoid future nomenclatural confusion caused by this erroneous type labelling, I here give comments on and clarify the status of the "types" of the Australian species of the *R. interrupta* complex. When label data are quoted, a slash (/) denotes the beginning of a new line on the label.

Ropalidia variegata interrupta and *R. variegata flavinoda*

A female in the NNM labelled 'Thursday I./ Mar. 15/ A. Mackie/ + A. Foote [in handwriting]', 'No. 45 [in handwriting]', 'Museum Leiden/ ex. coll. J. v. d. Vecht [in print]', 'Paratype [in print on orange label]' and '*R. variegata* (Sm.)/ var. *interrupta* m./ det. J. v. d. Vecht '37 [in van der Vecht's handwriting]' is undoubtedly the paratype of *R. v. interrupta*. In the NNM there is another female that is labelled, in addition to the same collection label as the paratype, with 'ac 32367 [in handwriting]', '*Ropalidia* [in print]/ *interrupta* ♀/ *interrupta* v d Vecht [in van der Vecht's handwriting]/ det. J. v. d. Vecht 1979 [in print, except last '9' in van der Vecht's handwriting]' and 'topotype [probably in van der Vecht's handwriting, on red label]'. This specimen is almost certainly not part of the type series. Van der Vecht (1941: 158) only listed two females for *R. variegata interrupta*, a paratype (the first female noted above in the NNM) and the holotype. Van der Vecht was presumably certain that he had sent the holotype to the MCZ, otherwise, he would not have labelled the second female specimen in the NNM 'topotype'. The specimens in the MCZ bearing the following labels should be treated as the holotypes of *R. v. interrupta* and *R. v. flavinoda* respectively: '*Ropalidia/ variegata* Sm./ subsp. *interrupta*?/ det. J. van der Vecht 1963' and '*Ropalidia/ variegata* (Sm.)/ subsp. *flavinoda* m/ det. J. van der Vecht 1963'. I interpret these labels to be of later origin, with van der Vecht's original labels having been replaced by someone in the MCZ (cf. Kojima 1999).

Ropalidia mutabilis mutabilis

The holotype of *R. mutabilis mutabilis* is in the ANIC and I could not find any specific differences between it and the holotype of *R.. interrupta* in the MCZ, and thus synonymized *R. mutabilis* under *R. interrupta* (Kojima 1999). Although I did not examine all of the paratypes of *R. mutabilis* in the ANIC, those that I examined agreed with the holotype. In the NNM, there are four females under '*Ropalidia mutabilis*'. Three females labelled 'Museum Leiden/ W. AUSTRALIA/ Windjana Gorge/ (Kimberley)/ 16-17.VIII.1968/ G. F. Mees', 'Paratype' and '*R. mutabilis/ mutabilis*/ Richards/ t Parat. [in Richards' handwriting]' (one female with the last label as '*R. mutabilis/ mutabilis*/ ♀ Parat. Richards') are certainly paratypes of *R. mutabilis*, though Richards (1978: 96) stated '1960' for the year of collection. The fourth specimen, labelled 'N. AUSTRALIA/ Port Darwin/ 19/ R. C. L. Perkins Coll./ B. M. 1942-95', 'Paratype', 'Museum Leiden/ ex collectie/ J. v. d. Vecht' and '*Ropalidia/ mutabilis*/ Parat Rich [in Richards' handwriting]' is a paratype of *R. mutabilis* indicated to be in the Natural History Museum, London (BMNH) in the original description. This specimen is darker, with reduced yellow markings, than the original description and might be one of the specimens that Richards (1978: 95) referred to as 'darker specimens which somewhat resemble *R. interrupta* also occur …'. Richards may have sent this specimen to van der Vecht for confirmation or on exchange with the NNM specimens.

The NNM houses three females and a male under a manuscript name that has never been published. Two females and the male labelled 'Museum Leiden/ W. AUSTRALIA/ E. Kimberley/ Grottnr Wyndham/ 5.XII.1974/ G. F. Mees' and 'Museum Leiden/ *Ropalidia/ interrupta* ♀ [or ♂]/ *impressa* Rich./ det. J. v. d. Vecht 1975' were certainly not seen by Richards. Van der Vecht might have identified them based on comparison with the last specimen, which is labelled 'Museum Leiden/ W. AUSTRALIA/ Mount House/ (Kimberley)/ 3.VIII.1968/ G. F. Mees', 'Paratype' and '*Ropalidia/ interrupta* v. d. V./ spp. *impressa*/ ♀ Parat. Rich. [in Richards' handwriting]'. This specimen may well be a paratype of *R. mutabilis* as Richards (1978: 96) listed a female with the same collection data except for a date of '3.vi.1968'.

All the female specimens placed under '*mutabilis*' and the unpublished manuscript name in the NNM did not show any specific differences from the types (holotype and paratype) of *R. interrupta*.

Ropalidia mutabilis torresiana

The holotype from Iron Range and a paratype from Somerset of *R. m. torresiana* are in the ANIC. Richards listed two other females from Torres Strait as paratypes and indicated the National Museum of Victoria, Melbourne (NMV) as the depository. I have not seen these paratypes in the NMV, while the holotype and paratype in the ANIC generally agreed with the holotype of *R. flavinoda* both in structure and coloration. On the other hand, the types of *R. m. torresiana* in the ANIC differed from Richards' original description in marking pattern; notably he referred to a yellow marking on the first metasomal tergum only as 'a pre-apical band', while the widened part of the first metasomal tergum of the holotype (and a paratype in the ANIC) is largely yellow.

In the NNM there is a single female specimen deposited under '*Ropalidia mutabilis torresiana*'. The specimen belongs to *R. interrupta* and is labelled 'AUSTRALIA/ Banks Is.,/ Torres Strait/ 12 February 1974/ J. P. Spradbery, Paratype' and '*R. mutabilis*/ ssp. R /*torresiana* R/ ♀ Paratype [in Richards' handwriting]'. The specimen is not a paratype of *R. m. torresiana*, as Richards mentioned neither Banks Island as a locality nor Spradbery as a collector. On the other hand, the specimen agrees, in most aspects, with Richards' original description of *R. m. torresiana*. It seems clear that the original description of *R. m. torresiana* was based on this "pseudotype" in the NNM (or possibly additional "pseudotypes" in the BMNH, though I have not seen such specimens in the BMNH) and not on the types deposited in the Australian institutions. I (Kojima 1999) pointed out a similar case for *R. eurostoma* Richards, 1978, of which the original description was undoubtedly based on the paratypes in the BMNH, not on the holotype and a paratype in the South Australian Museum, Adelaide (SAM); they belong to different species, the SAM specimens to *R. revolutionalis* (de Saussure, 1854) and the BMNH specimens to *R. interrupta*.

In conclusion, the synonymies of *R. mutabilis mutabilis* and *R. m. torresiana* respectively under *R. interrupta* and *R. flavinoda* are confirmed. Taxonomic points still unsolved are the relationships of *R. interrupta* and *R. flavinoda* to the Asian species *R. variegata* (Smith, 1852) and *R. jacobsoni* (du Buysson, 1908) (cf. Kojima 1999).

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